

## ARSENIC

Also known as: Arsen, Arsenia

Chemical reference number (CAS): 07440-38-2

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### WHAT IS ARSENIC?

Arsenic is a naturally occurring mineral found in soil, bedrock, and water. In its pure form, arsenic is a silver-gray or white brittle metal. Arsenic has no odor and is almost tasteless. Arsenic and its compounds have a variety of commercial uses. Manufacturers use arsenic to make other metals, glass, electronic components, and wood preservatives.

Arsenic occurs naturally in some Wisconsin drinking water supplies. Drugs used to treat parasite diseases have contained arsenic.

### HOW ARE PEOPLE EXPOSED TO ARSENIC?

**Breathing:** Arsenic in food or water does not evaporate into the air. However, burning arsenic-containing materials such as treated lumber will put arsenic fumes into the air. Burning treated wood in a wood stove or fireplace may expose people to dangerous levels of arsenic. Tobacco smoke contains traces of arsenic.

**Drinking/Eating:** Marine fish and seafood contain naturally high amounts of arsenic. However, the arsenic in these foods is a non-toxic form called “fish arsenic.” Calcium supplements made from sea shells may also contain high levels of arsenic.

Arsenic levels have been found in private drinking wells in Brown, Winnebago, and Outagamie Counties. Homes that are near waste sites where paint, pesticides or electronic components are disposed may also have arsenic in the drinking water.

**Touching:** Levels of arsenic typically found in the environment are not easily absorbed.

### DO STANDARDS EXIST FOR REGULATING ARSENIC?

**Water:** Wisconsin drinking water standards for arsenic are set at 50 parts per billion (ppb). We suggest you stop drinking water containing more than 50 ppb of arsenic. However, these standards are expected to be lowered in the near future.

**Air:** There is no standard for the amount of arsenic allowed in the air of homes. We use a formula to convert workplace limits to home limits. Based on the formula, we recommend levels of arsenic in the air of homes be no higher than 0.004 parts per million (ppm).

The Wisconsin Department of Natural Resources regulates the amount of arsenic that can be released by industries.

## WILL EXPOSURE TO ARSENIC RESULT IN HARMFUL HEALTH EFFECTS?

The following symptoms may occur immediately or shortly after eating or drinking less than a teaspoonful of arsenic:

- Headache, tired feeling, confusion, hallucinations
- vomiting, diarrhea, and digestive system bleeding
- seizures, and coma

Long-term exposure to toxic forms of arsenic may cause the following illnesses:

**Cancer:** Arsenic has been associated with certain types of skin cancer. Some studies also show a possible link with lung, liver, and kidney cancers.

**Reproductive Effects:** No reproductive effects have been reported.

**Skin:** Arsenic exposure can cause a certain pattern of skin changes that resemble warts, called "hyperkeratosis." Fingernails may show ridges and yellowing. Dark or light spots may also appear

**Nervous System:** Arsenic is harmful to the nervous system. Symptoms of arsenic exposure include tremors, headaches, and numbness.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

## CAN A MEDICAL TEST DETERMINE EXPOSURE TO ARSENIC?

Urine can be tested for arsenic up to a week after the exposure. Arsenic can also be measured in hair and fingernails within a few months of exposure. The results of arsenic urine tests may be misleading if you have eaten seafood, marine fish or ocean-derived vitamin supplements in the past five days.

If a person suspects high arsenic exposure, tests that monitor the functioning of the liver and kidneys should be done. These tests can be done by a doctor on blood samples.

*Seek medical advice if you have any symptoms that you think may be related to chemical exposure.*

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

## FOR MORE INFORMATION

- Poison Control Center (800-815-8855)
- Your local public health agency
- Division of Public Health, BEH, 1 West Wilson Street, Rm. 150 Madison, WI 53701-2659, (608) 266-1120 or Internet: <http://www.dhfs.state.wi.us/eh>



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